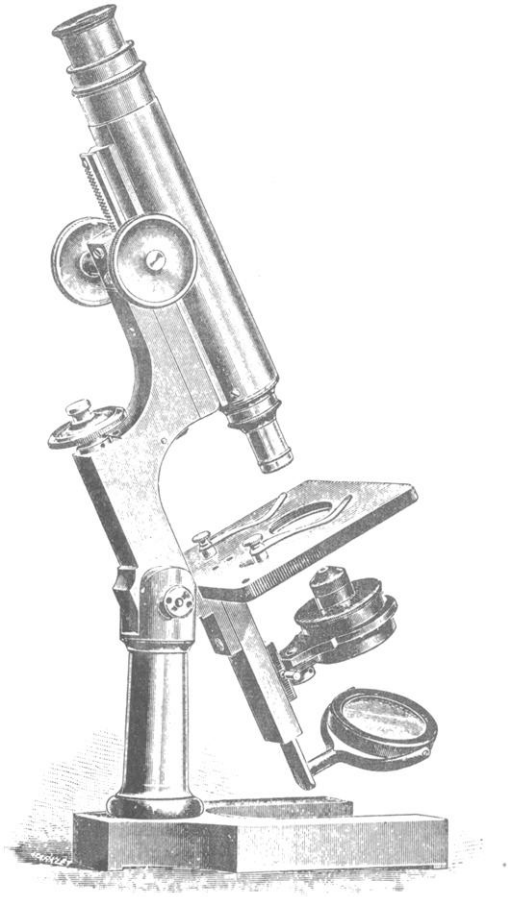
ZENTMAYER'S AMERICAN-CONTINENTAL STAND.

This stand has been designed to meet the wants of those workers who prefer the compact Continental model and yet are conscious of its inherent defects. It is substantially a combination of the upper half of our celebrated American stands with the lower half of the best Continental stands, and is adapted to have added all the usual optical accessories of either class of microscopes. As offered, it answers fully every want of the class-room or laboratory at very moderate cost.

The stand is constructed entirely of brass, handsomely finished and polished. The base is of horse-shoe form, filled with lead for extra weight, and gives perfect steadiness in every position. A stout pillar firmly supports the arm of the instrument on a trunnion joint, which allows all inclinations from the perpendicular to the horizontal position. The coarse and fine adjustments are of the same style and construction as the famous Centennial stand. The arm carrying the body is provided with two slides, the upper and longer one bearing the tube with rack-and-pinion movement, and sliding in the lower one, which is controlled by a lever of the second order, operated by a milled-headed micrometer screw in convenient position at the back of the instrument. At the bottom of the lower slide there is a shoulder against which the lever acts, and a spring above presses down against this shoulder, insuring its continuous contact with the lever during adjustments. All the mechanism is concealed within the arm, which is so hollowed as to secure both lightness and greater rigidity. This fine adjustment is absolutely free from lateral motion, and exceedingly sensitive. Its construction prevents wear, and is so positive that a revolving nose piece and attached objectives can be easily carried without injury. It also acts as a safety appliance in case an objective is accidentally racked down against an object, for the spring yields quickly to upward pressure. The body tube is five and one-half inches long, with draw-tube extending full ten inches, thus giving both English and Continental standards, and accommodating objectives corrected for either length.

The spacious stage is made of aluminum, which is incorrodible; the dimensions (three and five-eighths inches square) are commodious even for culture slides or serial sections; the surface is plane, with recessed opening to receive a glass plate, light-modifier, or disk diaphragm, if wanted; removable clips are provided, with springs



shaped and adjusted to hold a slide, and yet allow easy movement about the field of view. The substage has long sliding movements in the fixed bar beneath the stage, allowing ample room for a condenser or polarizer, and exact adjustments are easily and quickly made by aid of milled knobs extending on each side of the sliding

bracket, on which the ring of the substage is centered and affixed instantly by means of a single set-screw with capstan head. The mirrors are plane and concave, of large size, and have complete adjustments on an extensible bar. The diaphragms are cone-shaped, and have three different sizes of apertures. The Abbe illuminating apparatus has a condenser of 1.20 N. A. and Iris diaphragm with complete movements. A condenser of 1.40 N. A. can be substituted, if preferred, for the difference in the cost of the condensing systems. A set of stops are also furnished for dark-ground illumination.

The stand can be furnished with a swinging substage, with or without rack-and-pinion movement, and with a circular centering and revolving stage, provided with a sliding carriage similar to the Centennial stand at an additional moderate expenditure, and it is well worthy of such conveniences.

A modification of the swinging substage and mirrors can also be furnished, whereby the extensible mirror bar slides in another bar which swings from a joint on the under side of the swinging bar carrying the substage. This construction allows the substage and mirrors to swing independently of each other, click-stops indicating when either or both bars are in the optic axis of the instrument, and permits the substage to be swung aside entirely and the mirrors alone to be then swung into positions for central or oblique illumination without interference from the substage. The mirrors can be likewise swung aside completely to permit the use of direct illumination, with or without substage apparatus. These movements contribute much to convenient and rapid use, as it is unnecessary to remove and afterward return the substage or mirrors or any other part. In this instance the stage is made somewhat narrower to allow the substage to swing clear aside.

The draw-tube can be graduated in tenth-inches or millimeters or otherwise, as desired, and the milled head of the fine adjustment can be likewise graduated to measure longitudinal movements of the body, thus furnishing quite exact and very convenient means of gauging the thickness of cover-glasses or sections at small extra expense.

The rack-and-pinion movements are perfectly smooth and sensitive, and focusing even high powers can be done with facility and exactness by the coarse adjustment alone. The lever movement of the fine adjustment is absolutely true and delicate.